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a cost analysis of the rachna program

A Cost Analysis of the RACHNA Program

Abstract

Background and Interventions

India's Integrated Child Health Services (ICDS) program covers 39 million children under six years of age and eight million pregnant or lactating women through a community-level network of 700,000 *Anganwadi* Centers (AWCs). Traditionally a program targeted to the poor, the Government of India is planning to universalize ICDS's coverage and will construct an additional 188,000 AWCs. A review of best practices/innovations in ICDS was undertaken to inform the design of the universalization plan. Only four innovations were identified as currently meeting the best practice criteria. One of the four was CARE's Reproductive and Child Health, Nutrition and HIV/AIDS (RACHNA) Program. Understanding RACHNA's costs and how the program might be scaled-up are important considerations in developing a national strategy to achieve universalization.

Methods

Using an activity-based cost analysis of the program as a unifying analytic framework, this paper presents a detailed description of RACHNA—its structure and operations, as well as its costs by activity and by district, block and state levels of the implementing organizations—CARE and its NGO partners. The total low cost and high cost estimates of the program provide an estimated range of between 579 and 631 million rupees (of 2006).

Results and Discussion

Based on an adequacy assessment of the program using three partial indicators: (1) increased vitamin A supplementation, (2) increased breastfeeding and (3) reduced malnutrition—it is estimated that RACHNA averted 13,356 deaths and was responsible for a gain of 380,719 disability-adjusted life-years (DALYs). Comparing these annual impacts to the annual costs of RACHNA, and assuming that these impacts are due to RACHNA, it may be estimated that RACHNA's cost per death averted is 47,209 rupees (US$1,098) and its cost per DALY gained is 1,656 rupees (US$39). Bearing in mind that these are not definitive measures of the impact of RACHNA, despite the fact that these three measures only partially account for the impact of RACHNA activities, as judged by WHO (2006) criteria, because it has a cost per DALY averted that is less than per capita GDP, RACHNA is "very cost-effective".

How RACHNA's costs will increase as it expands coverage depends upon what happens to the organizational structure and the number, intensity and mix of acti sion. These factors, in turn, are likely to be dependent or additional program sites, and/or on its strategy reg m sites as it introduces new sites.

Over the course of the phasing-in of RACHNA, CARE given state, by extending coverage to new sites wit Management Team staff, and thus avoiding adding increased coverage from being focused exclusively to increasing numbers of replication sites. Similarly er)

Background

The purpose of this paper is to quantify the costs of a subset of RACHNA's total activities; the Integrated Nutrition and Health Project (INHP) and rural-based reproductive health component of *Chayan*, excluding urban *Chayan*, CB-DOTS[1] and the INHP's food logistics-related activities. Although the name "RACHNA" is used throughout this report, it is important to bear in mind that in this study it refers only to this subset of all RACHNA activities. The focus of the study is the incremental annual costs incurred by CARE in implementing the program. The costs of the two programs of Government of India that are implemented throughout the country and that are the focus of RACHNA's work – the Integrated Child Development Services (ICDS) scheme and the Reproductive and Child Health (RCH) – are not estimated. The study was designed to estimate the costs of replicating or scaling-Uttar Pradesh RACHNA activities. The study employs an activity-based costing methodology combined with an "ingredients approach" which identifies all the inputs and costs required to implement the program.

The Costing Methodology: Initial Considerations in Crafting an Analytical Approach

The costing methodology is not based on any particular year, nor is it based on any specific state or district. Instead, it is a hybrid that was constructed in such a way as to provide estimates of a prototypical state and a prototypical district. It is based on budget and expenditures data from all of the states and districts, together with more highly detailed information from Andhra Pradesh and Uttar Pradesh obtained though interviews with staff, as well as CARE's planning tools and documents, and a staff time allocation survey. The costing method does not simply calculate average expenditures by level of CARE's effort. Instead, given the objective of providing an aid to replication, an effort was made to identify and estimate the costs of activities, taking into account the sources of variation in the expenditure levels by state, district and block, and triangulating the various levels and approaches to the estimates so as to enable developing an estimate of the prototypical state and district, while at the same time providing reasonable approximations of CARE's historical level of activities and financing.

RACHNA Program Structure: A Principal Determinant of Cost

RACHNA's programs costs are driven primarily by structure and scale. As a result, its costs are more predictable than those of many health project interventions because it works foremost and most directly with the supply side of the system, and its activities and costs are largely independent of fluctuations in the level of utilization or consumer demand. At the same time, however, the program is small given its ambitious goals, as is self-evident in Tables 12.1a and 12.1b. RACHNA's beneficiaries are pregnant and lactating women, children 0-5 months and adolescents. There are a mere six CARE staff for every 100,000 ICDS beneficiaries i.e., there are 16,404 *Anganwadi* Center (AWCs) beneficiaries for every CARE staff-person. An even more striking reference point is that of the general population:

[1] Community based DOTS (TB) Program implemented by CARE in West Bengal.

there is one CARE staff for every 274,000 persons in the general population. Clearly, RACHNA is not a large program in terms of staff. On the contrary, it is a small program with an enormous charge in terms of its target population, and the types of behavior and cultural change, and the magnitude of the health impacts it is responsible for effectuating in a relatively brief period of time.

The RACHNA Program is highly structured, mirroring the Government of India's (GoI) highly structured administrative approach to both of the two public programs with which RACHNA works, the ICDS and the Ministry of Health and Family Welfare (MoHFW). Each of the RACHNA states has a state office, and – with only relatively minor variations in the pattern to take into account RACHNA's level of coverage in the state and whether or not it is a *Chayan* state – each of the state offices is configured the same.

Each RACHNA state program has a State Management Team (SMT) consisting of 3-4 persons. The SMT is led by a State Program Representative (SPR) who is supported by two Regional Managers (RMs) if it is an INHP-only state, or three

Table 12.1a: **RACHNA program staffing levels**

State	RACHNA State Office	Number of Regional Management Teams	Number of District Teams	Number of Districts	Number of Blocks	Number of Sectors	Number of AWCs	Number of AWC Beneficiaries*	Total Number of Staff
Andhra Pradesh	1	2	5	8	70	507	10,121	607,260	29
Bihar	1	1	2	3	36	233	5,127	307,620	9
Chhattisgarh	1	3	8	10	96	645	12,733	763,980	55
Jharkhand	1	3	9	17	125	1,109	13,562	813,720	60
Madhya Pradesh	1	1	2	3	29	189	4,855	291,300	15
Orissa	1	2	6	9	104	571	10,551	633,060	34
Rajasthan	1	3	6	7	64	419	8,769	526,140	43
Uttar Pradesh	1	3	10	12	132	667	15,754	945,240	70
West Bengal	1	2	6	9	91	683	13,397	803,820	32
Total	**9**	**20**	**54**	**78**	**747**	**5,023**	**94,869**	**5,692,140**	**347**

Table 12.1b: **RACHNA program staff-to-implementation unit ratios**

	Number of RACHNA Staff per					Average Number of AWC (Food) Beneficiaries per RACHNA staff
State	District	10 Blocks	100 Sectors	1,000 AWCs	100,000 Beneficiaries*	
Andhra Pradesh	3.6	4.1	5.7	2.9	4.8	20,940
Bihar	3.0	2.5	3.9	1.8	2.9	34,180
Chhattisgarh	5.5	5.7	8.5	4.3	7.2	13,891
Jharkhand	3.5	4.8	5.4	4.4	7.4	13,562
Madhya Pradesh	5.0	5.2	7.9	3.1	5.1	19,420
Orissa	3.8	3.3	6.0	3.2	5.4	18,619
Rajasthan	6.1	6.7	10.3	4.9	8.2	12,236
Uttar Pradesh	5.8	5.3	10.5	4.4	7.4	13,503
West Bengal	3.6	3.5	4.7	2.4	4.0	25,119
Total	**4.4**	**4.6**	**6.9**	**3.7**	**6.1**	**16,404**

*Assumes there are 60 food beneficiaries per AWC. Note there are more health service beneficiaries per AWC – the entire AWC catchment area population.

RMs if it also has *Chayan*. Each RM is assigned to three or four districts for which he/she provides programmatic and managerial leadership. Each RM is supported by a Documentation Officer, an administrative assistant and a driver. The State Team is also supported by one Monitoring and Evaluation Officer, an administrative assistant and a driver or two.

Going down the RACHNA hierarchical organizational pyramid, the next level is the district. The size of the District Team (DT) is also highly standardized. Depending on which interventions are functioning in a given geographic area, RACHNA DTs have one of the two possible configurations:

In INHP-only states, district teams typically comprise four staff persons:

- **Government Partnership Officer (GPO)**: responsible for interface with the ICDS and RCH counterparts as well as other administrative officials to facilitate the system's engagement for nutrition and health interventions;
- **Capacity Building Officer (CBO)**: responsible for managing and facilitating the capacity building inputs of INHP;
- **Demonstration and Partnership Officer (DPO)**: responsible for developing demonstration sites with government as well as non-government partners to inform the replication process;
- **Monitoring Officer (MO)**: responsible for meeting the mandatory audit and monitoring requirements for Title II commodities.

Where *Chayan-Rural* also operates, district teams have the following additional members:

- **Training Coordinator (TC):** responsible for coordinating and facilitating capacity building activities related to family planning and reproductive health interventions in rural areas;
- **Social Marketing Officer (SMO)**: responsible for facilitating coordination with SM agencies to develop SM outlets as well as supporting the demonstration efforts through NGOs, to be placed in districts with rural interventions.

At its lowest organizational – most local – level, RACHNA works through NGOs. The NGOs are contracted, managed, monitored and paid by the SMTs. Although the way in which NGOs are contracted varies by state, and there are some state-specific minimum size/coverage requirements, the NGOs are paid for providing coverage to a designated area and the AWCs, sectors and blocks within that area. The amounts specified in the contracts include payments for a set number and type of NGO personnel (including supervisory personnel) and a fixed payment for travel-related expenses, both of which are in direct proportion to the area the NGOs are contracted to cover.

The RACHNA Program, however, does not have universal coverage at any of the geographically-defined levels at which the program operates:

- in each of the nine states in which it operates, it works in only a portion of the state's districts;
- within districts, it sometimes covers only a portion of the blocks; and
- within blocks, it covers only that area which is covered by the ICDS program.

Table 12.2: The coverage of RACHNA program

State	Districts		Blocks		Sectors		AWCs	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Andhra Pradesh	8	10.0	70	9.0	507	10.0	10,121	11.0
Bihar	3	4.0	36	5.0	233	5.0	5,127	5.0
Chhattisgarh*	10	13.0	96	13.0	645	13.0	12,733	13.0
Jharkhand*	17	22.0	125	17.0	1,109	22.0	13,562	14.0
Madhya Pradesh	3	4.0	29	4.0	189	4.0	4,855	5.0
Orissa	9	12.0	104	14.0	571	11.0	10,551	11.0
Rajasthan*	7	9.0	64	9.0	419	8.0	8,769	9.0
Uttar Pradesh*	12	15.0	132	18.0	667	13.0	15,754	17.0
West Bengal	9	12.0	91	12.0	683	14.0	13,397	14.0
Total	**78**	**100.0**	**747**	**100.0**	**5,023**	**100.0**	**94,869**	**100.0**

*Identifies the states in which the *Chayan* Project functions. *Chayan* covers 29 of the 46 districts covered by RACHNA in these states.

Moreover, the coverage of the program varies substantially across states, and even within states, at the district, block and sector levels, as may be seen in the percentage distributions of each level shown in Table 12.2.

Methodological Implications of the Key Characteristics of RACHNA: The Catalytic Nature of the Program, its Enormous Scale and CARE's Highly Structured Approach

Time, resources, enormous size and the diversity of RACHNA program did not permit undertaking a detailed, comprehensive review of all costs at all levels and program sites. Instead, just two states were analyzed. The most important criteria in selecting the two to be studied were governance/administrative capacity. The two states selected were Andhra Pradesh (AP) and Uttar Pradesh (UP), which are at opposite ends of the governance performance spectrum (Dreze and Sen, 2002), which was thought important for capturing extreme values in costs. Within the two states, just two districts were analyzed, Vizianagaram in AP and Allahabad in UP. They were chosen because they were highly representative of the other 78 RACHNA districts in terms of:

- the number of blocks in the district (the average is 9);
- the number of sectors in the district (the average is 64);
- the district should have one district team assigned exclusively to that district (while this is the norm, the average is 0.7; there are 54 teams overseeing the 78 districts);
- the government agencies are of a "typical" level of responsiveness to RACHNA's initiatives;
- the travel distances and the difficulty of traversing the terrain that the district and NGO teams have to cover and the density of beneficiary population are both "average;" and
- the continuity of both CARE district staff and NGO partners are "average".

Table 12.3: **RACHNA program state staffing patterns and staff costs prototypical state profile used to estimate costs per program level**

State	State Offices	No. of RMs	No. of DTs	No. of Districts	No. of Blocks	No. of Sectors	No. of AWCs	No. of Beneficiaries*	Total Staff
INHP per state average	1	2	9	9	90	540	10,800	1,080,000	43
9 states total	9	18	81	81	810	4,860	97,200	9,720,000	387
Chayan-rural state avg.	4	4		46	417	2,840			

*Estimated number and composition of beneficiaries per AWC: 6 months to 3 years, 30 persons; 3 years to 6 years, 40 persons; pregnant and lactating women, 25 persons; adolescent girls, 25 persons.

The structural characteristics of the prototypical state profile that was used to estimate the costs of RACHNA at each program level are presented in Table 12.3. There are 81 districts, 20 RMs and 57 DTs in the actual RACHNA Program, compared with 81, 18 and 81, respectively. Given the larger number of RMTs and especially DTs, the prototypical state-based estimates of state staffing costs will be slightly higher than the cost of the actual RACHNA state staffing costs.

The Costs of the RACHNA Program: A Modularized Analysis

The approach taken in developing cost estimates was a modularized one. Ten cost categories were identified. In this section the individual modules that were developed and used in the cost estimations are presented. The following section pulls together the modules and discusses the total costs of RACHNA. This section begins with a discussion of the CARE India Headquarters (CIHQ) total costs. It then presents the personnel (only) costs of the State and District Offices. Next, the discussion turns to the NGOs' total costs, followed by a discussion of the Capacity Building (CB), BCC, Supplies & Equipment and Basic Services. The latter four categories are costs that are incurred, planned and managed at the state level, but they are made by all levels of the program in the state and are made in support of all activities – at the state, district, block and community levels.

Headquarters structure, staffing and costs

RACHNA is headed by a Senior Program Director (SPD) assisted by four Regional Program Directors (RPD), a Program Development Manager, a Technical Director (TD) and a team of technical experts and support staff. Each RPD, assisted by a Technical Program Coordinator, is responsible for providing operational support and technical assistance as needed. Four RPDs are responsible for managing implementation through the state level teams in the nine states. Each of the RPDs in turn is supported by a Technical Program Coordinator (TPC). Each team of RPD and TPC was responsible for 2-3 states and worked closely with the state level Program Management Team (PMT) to manage the operations at the state level, ensuring process and technical integrity and consistency with the program design.

By design, a TD heads a team of eight Technical Specialists that together provide technical support and guidance. CARE, however, has never filled the TD position, relying instead upon its close working relationship with the USAID-funded BASICS Project to perform this function. BASICS has financed and staffed a local office

that has been dedicated exclusively to providing TA to RACHNA, and otherwise fulfilling the role of the TD and more. To valuate the contribution of the BASICS TA to the annual recurrent operating costs of RACHNA, financial records of the BASICS/India office's costs and the costs that BASICS/Washington has incurred in supporting CARE's RACHNA Program were obtained from BASICS' headquarters. From those data it is estimated that BASICS' annualized local office and program-support costs that are spent in support of RACHNA are US $275,168, and that BASICS' headquarters' average annual costs of supporting RACHNA-Rural's nutrition activities are $23,693. Thus, it is estimated that BASICS contributes or defrays what would otherwise be direct annual outlays of RACHNA of a total of $298,861. These are considered CIHQ costs in this paper.

The CARE annual budget includes 29 CIHQ RACHNA positions (i.e., persons who regularly devote some portion of their time to RACHNA-Rural), not including the Country Director (CD) or the Assistant Country Director (ACD). The number of staff actual working in the CIHQ on RACHNA in April 2006 was 19, two-thirds of the number budgeted.

Shared program costs

Some of CIHQ's costs of administration are shared between RACHNA and other programs. CIHQ has developed a formula to allocate portions of these "shared program costs" (SPC) to other programs they are supporting. The formula (which has been approved by USAID) is based on four weighted criteria that reflect the relative administrative and managerial intensity with which CIHQ supports the programs. The SPCs constitute about one-third of the CIHQ's annual total costs.

Table 12.4 contains the total annual CIHQ costs of RACHNA, including SPCs. Personnel costs are based on the April 2006 staff (which is exclusive of the CD and ACD-HHD costs). Within RACHNA-Rural, the CIHQ is the level that has the least routine activities and thus the least structured budget. CIHQ expenditures vary considerably from year-to-year both in level and in composition, reflecting

Table 12.4: **Estimated annual CIHQ costs of RACHNA**

Item/Category	Rupees	Percent
1. Personnel	14,168,955	12.0
2. Assistant Country Director-HHD	13,000,000	11.0
3. Services (R&D, Consultants, etc.)	23,734,833	20.0
4. Supplies and Equipment	302,250	0.0
5. BCC	4,207,327	3.0
6. Travel and Transportation	7,150,972	6.0
7. Training	550,000	0.0
8. NGOs	5,000,000	4.0
Sub-total	**68,114,336**	**56.0**
9. Shared Program Costs	39,605,236	33.0
10. Technical Assistance (BASICS)	12,851,023	11.0
Total	**120,570,595**	**100**
In US$:	2,803,967	

evolving, felt needs, opportunities and new initiatives. CIHQ's estimated total annual costs are roughly 121 million rupees.

RACHNA's "Typical" state office structure, staffing and costs

Table 12.5 presents the personnel-only costs of RACHNA State Management Teams. The annual personnel costs of an INHP-only SMT with two RMTs are 4.7 million rupees, while those of an INHP-*Chayan* SMT with three RMs are 6.0 million rupees. The annual personnel costs of all of CARE's SMTs are 37.8 million rupees.

The "Typical" district team structure, staffing and cost

Table 12.6 presents the numbers and types of INHP-only and the *Chayan*-only staff of the RACHNA DTs and their annual costs. Table 12.7 is based on data from a survey of DTs and shows how the DTs allocate their time to major program activities and the value of time spent by DT personnel undertaking the eight major activities involved in implementing RACHNA's DT functions.

Table 12.5: **RACHNA regional management and state teams composition and total annual remuneration**

Position	No. of staff	Cost per staff-person/Yr	Annual cost of All DTs
Regional Management Team			
Regional Program Manager	1	612,835	612,835
Documentation Officer	1	286,856	286,856
Administrative Assistant	1	232,292	232,292
Driver	1	204,973	204,973
Total	4	1,336,956	1,336,956
INHP State Office Structure			
State Program Representative	1	785,789	785,789
Administrative Assistant	2	232,292	464,585
Driver	2	204,973	409,946
Monitoring and Evaluation Officer	1	330,718	330,718
Sub-total	**6**		**1,991,037**
Two Regional Management Teams	8		2,673,911
Total	**14**		**4,664,949**
RACHNA-Rural State Office Structure			
State Program Representative	1	785,789	785,789
Administrative Assistant	2	232,292	464,585
Driver	2	204,973	409,946
Monitoring and Evaluation Officer	1	330,718	330,718
Sub-Total	**6**		**1,991,037**
Three Regional Management Teams	12		4,010,867
Total	**19**		**6,001,904**
State Offices (All 8 Combined)			
State Program Representative	6	785,789	4,714,732
Regional Manager	17	612,835	10,418,190
Documentation Officer	19	286,856	5,450,256
Administrative Assistant	26	232,292	6,039,600
Monitoring and Evaluation Officer	7	330,718	2,315,026
Driver	23	204,973	4,714,379
Others	15	275,737	4,136,056
Total	113	2,729,199	**37,788,239**


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Table 12.6: RACHNA district team composition and total annual remuneration

Position	Actual no. of staff	Annual cost per staff-person	RACHNA total annual cost-all DTs
INHP District Team			
Government Partnership Officer	48	365,269	17,532,907
Demonstration Partnership Officer	52	328,967	17,106,274
Capacity Building Officer	49	317,121	15,538,923
Monitoring Officer (MO)	41	254,603	10,438,712
Total	190	1,265,959	60,616,816
Cost/INHP DT excluding MO		**1,011,357**	
***Chayan*-Rural District Team**			
Social Marketing Officer	24	222,569	5,341,660
Training Coordinator	25	306,648	7,666,202
Total	49		25,931,644
Cost/*Chayan*-Rural DT		**529,217**	

Table 12.7: District teams' average time spent and staff cost per activity

Function/Activity	Percent	Rupees
1 Training/Capacity building	16.0	157,283
2 Improving supervision in ICDS and health	29.0	293,642
3 Other monitoring and evaluation	17.2	174,372
4 BCC (materials development, implementation, distribution, etc.)	2.8	28,248
5 Service/Supplies strengthening (ICDS + Health)	8.0	80,909
6 CARE's administration/management	17.4	175,767
7 NGO management	8.5	85,791
8 Other (Specify)	1.5	15,345
Total	**100.0**	**1,011,357**

DT=GPO + DPO + CBO [Total DT annual personnel cost=Rs. 1,011,357. Excludes Monitoring Office (MO)]

Table 12.8: Prototypical district team's average time and cost, capacity building and supervision and system strengthening

	Time	Cost
1. Capacity building and supervision for		
CA	1%	5,580
AWW	16%	159,725
ANM	1%	12,904
AWW+ANM	5%	49,870
Community (CA, PRI, CBO)	1%	5,580
Total capacity building and supervision	**23%**	**233,658**
2. System strengthening activities		
Sector	8%	80,211
Block	24%	242,726
District	4%	39,059
Sub-total	36%	361,996
All other system strengthening activities	1%	12,555
Total system strengthening activities	**37%**	**374,551**
3. NGO+CARE management	**26%**	**261,558**
4. All other activities	**15%**	**154,145**
Total	**100%**	**1,011,357**

The DTs are the most local level and most numerous CARE staff working in RACHNA and are regarded as the heart of the program. To provide more insight into how RACHNA spends these important resources, Table 12.8 reclassifies the first six of the eight functions into just two categories – (1) capacity building and supervision and (2) system strengthening – and assigns their costs to the types of persons supported to provide greater insight into how much of the program's costs and efforts are expended on which ICDS and RCH staff. Twenty three percent of the DT's personnel costs are devoted to capacity building and supervision, and 37 percent is devoted directly to strengthening the ICDS and RCH systems.

To analyze the costs of the NGOs, the structure and content of CARE/India contracts with NGOs working in Andhra Pradesh and Uttar Pradesh were reviewed. It was found that the structure of the contracts and the structure of NGO operations varied, but the NGO cost per AWC was very similar. To simplify the exposition, only one of these different NGO organizational structures is analyzed here, that of the NGOs of AP. NGO contracts are of one year duration. They are based on an annual implementation plan and are highly structured. They specify a fixed staffing level and pattern, designate a fixed geographic area of responsibility (generally a minimum of one district), and pay specific costs. Even the pay for each type of personnel is specified. The costs are set presented by activity and type of input in Table 12.9.

At the bottom of the Table 12.9 an alternative breakdown of NGO costs is presented, "All Capacity Building and Supervision for". This analysis provides information on the relative annual costs/expenditures on each of the key functionaries with whom the NGOs work. The cost estimates in this section are comprised primarily of activities 1, 3 and 4, but do not include all of the costs of these activities. It covers 470,266 rupees or 86 of the 92 percent of the total NGO costs of 507,499 rupees of these activities (i.e., 93 percent of them). If it is assumed that the distribution of the 14 percent of NGO costs that are incurred in conducting "other activities" is spent supporting capacity building and supervisory (CB&S) activities in direct proportion to the expenditures of those CB&S by type of supervisee or trainee, it is possible to assign all of the NGOs' costs to specific types of supervisees or trainees. Nearly two-thirds (65 percent) of total NGO costs are spent on community capacity building and community-related supervisory activities (CAs, PRIs and CBOs).

Capacity building costs (All other than the NGOs' CB costs)

The District Team and the NGOs' personnel expenditures on Capacity Building (CB) are only a portion of the total costs of Capacity Building. Capacity Building – independent of the DT and NGOs' costs – constitutes a separate major cost category that captures the remainder of the costs of CB viz., the trainers' honorarium, CB materials, refreshments, and the trainers' and trainees' per diem, travel and transportation costs. The two major components of Capacity Building are training and meetings. CB costs vary by type of trainee and type of meeting. The RACHNA cost of meetings is only a fraction of the total costs of the meetings because these are regular meetings of ICDS and the MoHFW personnel that RACHNA is piggy-backing on. Thus, the costs of time and travel of ICDS and RCH staff are already being paid, and RACHNA's costs are only the incremental costs of the NGOs participating in these sessions (as trainers or trainees or in the meetings

Table 12.9: Annual total costs of NGO activities

Activity	Travel costs		Staff costs		Other variable costs	Fixed costs	Total annual NGO costs	Percent of total costs
	Community/ Sector Level Staff	Block Level Coordinator	Community/ Sector Level Staff	Block Level Coordinator				
1 Development/ Support of demonstration sites	46,246	7,400	90,609	19,120	8,169	19,902	191,446	34.9
2 Training and other CB for self	151	93	296	240	39	95	914	0.2
3 Capacity building/ training provision	10,733	3,356	21,030	8,671	2,189	5,334	51,313	9.4
4 Supervision	64,843	9,497	127,046	24,538	11,296	27,522	264,740	48.3
5 Establishment of referral networks for STI/RTI	906	1,638	1,775	4,231	428	1,042	10,020	1.8
6 Other monitoring and evaluation	3,121	2,016	6,116	5,209	823	2,005	19,290	3.5
7 BCC (materials development, implementation, distribution, etc.)			4,143	1,571		663	6,376	1.2
8 CARE's administration/ management			986	2,420		395	3,802	0.7
Total:	**126,000**	**24,000**	**252,000**	**66,000**	**22,944**	**55,900**	**547,902**	**100.0**
All capacity building and supervision for:								
CAs	9,867	2,258	19,333	5,834	1,865	4,543	43,700	8.0
AWW	17,338	2,711	33,971	7,004	3,051	7,434	131,005	23.9
ANM	151	372	296	962	89	217	2,087	0.4
AWW +ANMs	17,449	2,711	34,188	7,004	3,068	7,474	71,893	13.1
Community/Homes (Not exclusively CA)	53,666	8,449	105,148	21,829	9,455	23,035	221,581	40.4
Sub-total	**98,472**	**16,500**	**192,936**	**42,632**	**17,527**	**42,702**	**470,266**	**86**
%	78.0	69.0	77.0	65.0	76.0	76.0	86.0	
All other activities	27,528	7,500	59,064	23,368	5,417	13,198	77,636	14
%	22.0	31.0	23.0	35.0	24.0	24.0	14.0	
Total costs	**126,000**	**24,000**	**252,000**	**66,000**	**22,944**	**55,900**	**547,902**	**100**
%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Each NGO covers 4 blocks, 20 sectors, 460 AWCs, and is staffed by 7 Cluster Coordinators and 1 Program Manager per Block, 1 Secretary per District

– which have already been noted and accounted for in the preceding section) and of CARE staff participating, as well as some minor outlays for refreshments.

The total CB training costs are the sum of the estimated costs of training 12 different types of trainees. The costs per trainee vary primarily due to differences in their per diems and the duration of the training. On average, INHP total annual CB costs for training are 792,679 rupees per district to train 7,859 persons and 7.1 million rupees to train 70,731 individuals. The INHP training costs constitute 89 percent of total INHP CB costs. The remainder of INHP's annual CB costs comprise

the costs stemming from meetings. These costs average about 100,000 rupees per district, or roughly 900,000 per district. Thus total annual INHP CB costs are eight million rupees per state or about 900,000 rupees per district. The *Chayan* CB costs consist only of training-related costs. Total *Chayan* CB costs average about six million rupees per state per year, or about 850,000 rupees per district, and the average number of trainees are 59,000 per state or 8,400 per district.

The diversity of trainees and their institutional affiliations is noteworthy. RACHNA's training promotes the functional convergence of the ICDS and MoHFW in two ways. First, it trains them using the same approach and one that is practical and strategic. Second, many of CB activities bring together functionaries from both agencies and provide an opportunity for them to work and learn together, to share experiences and to develop an *esprit de corps*. In short, CB is an important knowledge and skill-enhancing and team-building activity. Tables 12.10 and 12.11 provide further evidence of the significance of RACHNA's multi-sectoral approach. Although the largest proportion of total RACHNA CB expenditures are made supporting ICDS staff, that proportion is only 45 percent, less than half the total, and ICDS trainees constitute only one-quarter of total trainees. The MoHFW benefits significantly from RACHNA; MoHFW trainees constitute 18 percent of RACHNA trainees and 14 percent of RACHNA CB expenditures. Hence, while RACHNA is often regarded as "just" an ICDS program, that is not an accurate

Table 12.10: **INHP annual capacity building cost estimates**

State characteristics	Type of trainees	Unit cost per	Average costs per			Average no. of trainees/ meetings per		
		Trainee/ meeting	Block	District	State	Block	District	State
Number per State	TBA	80	3,292	32,921	296,290	41	411	3,699
	CA	149	17,063	170,627	1,535,639	115	1,149	10,341
No. of Sectors - 540	AWW	212	27,811	278,113	2,503,017	131	1,310	1,790
No. of Blocks - 90	LS	233	4,139	41,385	372,465	18	178	1,602
No. of Districts - 9	Other ICDS	95	3,735	37,351	336,161	39	394	3,546
No. of Districts - 9	ANM	48	3,456	34,559	311,035	72	717	6,453
	LHV	203	2,171	21,710	195,393	11	107	963
	Other health	149	2,511	25,113	226,021	17	169	1,521
	NGO	230	1,955	19,550	175,950	9	85	765
	Private Practitioners	122	2,473	24,725	222,529	20	203	1,827
	Other Trainees	34	10,662	106,624	959,616	314	3,136	8,224
	Sub-total 1		79,268	792,679	7,134,114	786	7,859	70,731
	Type of Meetings							
	Sector Meetings (per state)	589	3,536	35,364	318,276			
	Block Meeting (per state)	438	438	4,382	39,438			
	District Meeting (per state)	4,744	474	4,744	42,698			
	Mini-RAP/District (1/year)	56,000	5,600	56,000	504,000			
	Sub-Total 2		10,049	100,490	904,412			
	Total		89,317	893,170	8,038,526			

INHP 9-State Estimated Annual CB Costs based on CARE's Current Program Site Characteristics and Activities (Rupees): 72,346,730

Table 12.11: *Chayan*-rural annual capacity building cost estimates

State characteristics	Type of trainees	Unit cost per	Average costs per			Avg. no. of trainees/meetings per		
		Trainee/ meeting	Block	District	State	Block	District	State
Number per State	TBA	80	3,292	35,273	246,908	41	440	3,083
No. of Sectors - 375	CA	149	17,063	182,814	1,279,699	115	1,231	8,618
No. of Blocks - 75	AWW	212	27,811	297,978	2,085,848	131	1,404	9,825
No. of Districts - 7	LS	233	4,139	44,341	310,388	18	191	1,335
No. of Districts - 7	Other ICDS	95	3,735	40,019	280,134	39	422	2,955
	ANM	48	3,456	37,028	259,196	72	768	5,378
	LHV	203	2,171	23,261	162,827	11	115	803
	Other health	149	2,511	26,907	188,351	17	181	1,268
	NGO	230	1,955	20,946	146,625	9	91	638
	Private Practitioners	122	2,473	26,492	185,441	20	218	1,523
	Other Trainees	34	10,662	114,240	799,680	314	3,360	23,520
	Total:		79,268	849,299	5,945,095	786	8,420	58,943

Chayan-Rural 4-State CB Cost Estimates based on CARE's Current *Chayan* Program Site Characteristics and Activities (Rupees): 23,780,379

characterization – its focus is wider. This is underscored by the high proportion of costs and trainees that are attributable to "others", who are primarily people from the community – Change Agents, Self-Help Groups and other Community-Based Organizations, PRI representatives and health practitioners. This has implications for the potential sources of financing for RACHNA and/or its replication. It suggests that if funding were to be provided in proportion to the "benefits" of CB efforts, then this would be a program co-financed by at least two national level agencies, ICDS and the MoHFW.

Behavior Change Communication

RACHNA's Behavior Change Communication (BCC) activities reflect its two-pronged general strategic approach. Its demand-side/community component is aimed at promoting behavior change at the household and community levels through interpersonal communication, wall mural painting, folk theater, printed material and radio. Its supply-side/institutional provider component is designed to complement its CB efforts. Usually, printed materials have been standardized, purchased and distributed to the states by the CIHQ in order to obtain volume discounts. The average expenditures per block are about 62,500 rupees for INHP and 15,000 for *Chayan*-Rural, which (given the prototypical district and state sizes) comes to 560,000 and 110,000 per district, respectively, and 5.6 million and 1.1 million per state, respectively.

Other costs (Other transport, supplies and equipment and services)

The final categories of costs are Other Transport, Services and Supplies and Equipment. Services include consultant services (exclusive of those provided through BASICS) primarily related to program content and information systems. The bulk of the Supplies and Equipment category is for computers, office equipment and to a lesser extent, office building repairs and maintenance. (Vehicle repairs and maintenance were taken into account in the travel estimates). Annual Supplies & Equipment costs are estimated at 1.5 million rupees per

state for INHP and 9,000 rupees per district for *Chayan*-Rural. Services costs are estimated at 2.5 million per state for INHP and, for *Chayan*-Rural 6,270 rupees per block or 470,000 per state.

The Total Annual Recurrent Costs of RACHNA

This section presents the estimated total annual recurrent costs of RACHNA, bringing together the modularized components of the program that were constructed and described in the preceding section. The costs discussed here are those estimated using the costing "model" and are simply the sum of the algorithm-based, modularized costs of the INHP and *Chayan*-Rural that were developed in the previous section. The "Per State Totals" combine these modularized costs with the parameters of the prototypical state that were earlier discussed. To obtain per district costs, the per state totals are simply divided by nine for INHP and four for *Chayan*-Rural. This approach implicitly assumes there are no fixed overhead costs of the CIHQ or of the State Office.

The low and high estimates of each of the programs represent the sum of a number of alternative assumptions (there are at most two alternatives for each cost module). The low estimate is developed by selecting the low cost option wherever an alternative is identified. The high estimate is the sum of all of the high cost options. Thus, depending upon how these various alternative options are combined, there are a number of different intermediate level cost estimates of INHP and *Chayan*-Rural that can be developed between the low estimate-high estimate demarcated range, and thus a number of different cost estimates of RACHNA-Rural. The maximum variation in RACHNA-Rural's estimated costs is 11 percent. Most of this variation is due to variation in the INHP Program's costs, primarily at the District, CIHQ and State Management Team levels, as may be seen in Table 12.12.

Table 12.13 unpacks the cost estimates to provide additional detail in terms of composition of the major cost categories. The table brings together all of the modularized components discussed in preceding section and also presents estimates of several different scenarios.

Table 12.12: RACHNA's total costs by major budget category

	INHP		*Chayan*-Rural		RACHNA-Total		RACHNA-Total	
	Low	High	Low	High	Low	High	Low (%)	High (%)
CIHQ Level	49,094,324	54,767,252	12,052,057	3,334,017	61,146,381	68,101,268	11	11
SPC+TA	36,194,819	36,194,819	8,917,564	8,917,564	5,112,383	45,112,383	8	7
State Level	40,079,217	45,089,119	5,923,672	5,923,672	46,002,890	51,012,792	8	8
District Level	78,599,110	117,898,666	32,487,782	32,487,782	111,086,893	150,386,448	19	24
NGOs	108,484,596	108,484,596	11,550,000	11,550,000	120,034,596	120,034,596	21	19
Capacity Bldg	72,346,730	72,346,730	23,780,379	23,780,379	96,127,109	96,127,109	17	15
BCC	50,640,261	50,640,261	4,494,400	4,494,400	55,134,661	55,134,661	10	9
Other	42,163,313	42,163,313	2,448,000	2,448,000	44,611,313	44,611,313	8	7
Total	**477,602,369**	**527,584,754**	**101,653,855**	**102,935,815**	**579,256,224**	**630,520,569**	**100**	**100**

Table 12.13: Annual recurrent cost of RACHNA by program component, implementation level and major budget category

	Unit cost	Number of units/ state	Single state totals	Current CAIE coverage cost estimates: (Based on a protypical state's parameters)	
				Low estimate	High estimate
1. CIHQ RACHNA Team			**5,454,925**	**9,094,324**	**54,767,252**
a. INHP Only Total				11,288,047	16,960,975
(1) INHP Only Personnel				582,200	582,200
(2) Transportation				37,224,077	37,224,077
(3) All Other INHP Expenditures			**3,013,014**	**12,052,057**	**13,334,017**
b. *Chayan*-Rural Only Total				2,880,908	4,162,867
(1) *Chayan*-Rural Only Personnel				9,171,149	9,171,149
(2) All Other *Chayan*-Rural Expenditures					
2. Shared Program Costs and TA			**4,021,647**	36,194,819	36,194,819
a. INHP			**2,229,391**	8,917,564	8,917,564
b. *Chayan*-Rural					
3. State Management Team			**5,009,902**	**40,079,217**	**45,089,119**
a. INHP Only					
(1) Regional Management Team	1,336,956	2	2,673,911	21,391,290	24,065,201
(2) Rest of SMT	1,498,791	1	1,498,791	11,990,327	13,489,118
(3) Travel (fares, per diem, lodging)	741,500	1	741,500	5,932,000	6,673,500
(4) Transportation (1 vehicle: gas, spares, service)	47,850	2	95,700	765,600	861,300
b. *Chayan*-Rural Only			**1,516,806**	**5,923,672**	**5,923,672**
(1) Regional Management Team	1,336,956	1	1,336,956	5,347,822	5,347,822
(2) Travel (fares, per diem, lodging)	132,000	1	132,000	528,000	528,000
(3) Transportation (1 vehicle: gas, spares, service)	47,850	1	47,850	47,850	47,850
4. District Team					
a. INHP Only Total			**12,597,427**	**78,599,110**	**117,898,666**
(1) INHP Only Personnel	1,011,357	9	9,102,209	54,613,255	81,919,883
(2) Travel (fares, per diem, lodging)	276,708	9	2,490,368		
Low: 54 DTs				14,942,205	
High: 81 DTs					22,413,308
(3) Transportation (1 vehicle: gas spares, services)	71,775				
1) Low: 7 DTs each with 2 vehicles		14	1,004,850	9,043,650	
2) High: 7 DTs each with 3 vehicles		21	1,507,275		13,565,475
b. *Chayan*-Rural Only Total			**7,986,946**	**32,487,782**	**32,487,782**
(1) *Chayan*-Rural Only Personnel	529,217	7	3,704,521	14,818,082	14,818,082
(2) Travel (fares, per diem, lodging)	540,000	7	3,780,000		
29 DTs				15,660,000	15,660,000
(3) Transportation (1 vehicle: gas spares, services)	71,775				
1) Low: 7 DTs each with 1 vehicle		7	502,425	2,009,700	2,009,700
5. NGOs					
a. IHNP: (1 per 4 blocks)	547,902	22	12,053,844	108,484,596	108,484,596
b. *Chayan*-Rural (per block)	38,500	75	2,887,500	11,550,000	11,550,000

(Contd.)

Table 12.13: (Contd...)

	Unit cost	Number of units/ state	Single state totals	Current CARE coverage cost estimates: (Based on a protypical state's parameters)	
				Low estimate	High estimate
6. Capacity Building/Training					
INHP (per state)	8,038,526	1	8,038,526	72,346,730	72,346,730
Chayan-Rural (per state)	5,945,095	1	5,945,095	23,780,379	23,780,379
7. BCC					
INHP (Avg. per block)	62,519	90	5,626,696	50,640,261	50,640,261
Chayan-Rural (per block)	14,981	75	1,123,600	4,494,400	4,494,400
8. Other travel (not including in CIHQ, State, District or NGO budget lines) INHP (9-state total)	684,813	1	684,813	6,163,313	6,163,313
9. Supplies & Equipment (including Repairs & Maint.)					
INHP (per State)	1,500,000	1	1,500,000	13,500,000	13,500,000
Chayan-Rural (per District)	9,000	7	63,000	567,000	567,000
10. Services					
INHP (per State)	2,500,000	1	2,500,000	22,500,000	22,500,000
Chayan-Rural (per Block)	6,270	75	470,250	1,881,000	1,881,000
		TOTAL COST (In Current Rupees)			
	Total Cost of INHP:		7,487,778	477,602,369	527,584,754
	Total Cost *Chayan*-Rural:		5,235,601	101,653,855	102,935,815
	Total Cost of RACHNA:		2,723,379	579,256,224	630,520,569
		TOTAL COST (In US$, Exchange rate: 43 Rupees = US$1)			
	Total Cost of INHP:		1,336,925	11,107,032	12,269,413
	Total Cost *Chayan*-Rural:		586,874	2,364,043	2,393,856
	Total Cost of RACHNA:		1,923,800	13,471,075	14,663,269

Chayan-Rural is assumed to be an incremental add-on to the base, INHP-Only Program in rupees

An Activities-based View of the Total Costs of RACHNA

Table 12.14 presents a different way of looking at the total cost data; it categorizes the 10 major budget category/activities of all levels of the organizations implementing the RACHNA Program into one of four major activities: (1) local level capacity building and supervision, (2) general ICDS and health system strengthening, (3) NGO and CARE management and (4) all other activities. Financially speaking, the most important of these four activities is local level capacity building and supervision. It accounts for 38 percent of RACHNA's total costs. ICDS and health system strengthening is the next most important activity, accounting for one-third of total costs. The vast majority (88 percent) of the share of system strengthening costs involve the sector, block or district levels. NGO and CARE management represents 18 percent of RACHNA costs, with all other activities constituting the residual, 12 percent.

The single most important focus of local level capacity building and supervision is the AWW. Twenty percent of all RACHNA costs are incurred in capacity building

Table 12.14: RACHNA-rural annual recurrent cost per state by major activity

	(A) Per NGO (Item #5)	(B) Per District (Item #4)	(C) NGOs+DT per State (=A+B)	(D) CB (Item #6)	(E)	(F)	(G)	(H)	Per State Total Cost RACHNA	Percent
					Per State Costs of:					
					State (#3)	SPC+TA (#2)	CIHQ (#1)	Other (#7-10)		
1. Local Level Capacity Building and Supervision for:										
CA	43,912	14,018	1,090,900	2,815,337	36,009	39,941	46,720	66,032	4,089,487	5.0
AWW	137,085	401,257	6,589,048	4,588,865	1,030,770	1,143,309	1,337,350	1,890,175	16,423,441	20.0
ANM	2,578	32,416	345,383	570,230	83,272	92,363	108,039	152,700	1,339,378	2.0
AWW+ANM	73,791	125,283	2,739,053	-	321,834	356,972	417,557	590,164	4,376,849	5.0
Community (CA, PRI, CBO, SHG)	221,793	14,018	5,004,282	-	36,009	39,941	46,720	66,032	5,187,532	6.0
Sub-Total	**479,161**	**586,991**	**15,768,666**	**7,974,432**	**1,507,895**	**1,672,526**	**1,956,386**	**2,765,104**	**31,416,687**	**38.0**
2. General ICDS and Health System Strengthening at:										
Sector	3,053	201,504	1,861,563	1,902,547	517,635	574,151	671,595	949,215	6,398,327	8.0
Block	9,240	609,770	5,633,251	1,070,104	1,566,410	1,737,430	2,032,305	2,872,406	14,674,726	18.0
District	1,487	98,124	906,500	546,698	252,066	279,586	327,038	462,226	2,735,947	3.0
Sub-Total	13,780	909,398	8,401,315	3,519,348	2,336,111	2,591,168	3,030,938	4,283,847	23,809,000	29.0
All Other System Strengthening Activities	478	31,540	291,380	2,489,840	81,023	89,869	105,121	148,575	3,193,540	4.0
Total System Strengthening Activities	**14,258**	**940,938**	**8,692,695**	**6,009,188**	**2,417,134**	**2,681,036**	**3,136,059**	**4,432,422**	**27,002,540**	**33.0**
3. NGO+CARE Mgt	**13,759**	**657,079**	**6,153,958**	-	**1,687,942**	**1,872,231**	**2,189,984**	**3,095,265**	**14,743,797**	**18.0**
4. All Other Activities	**79,224**	**355,698**	**4,910,406**	-	**913,738**	**1,013,499**	**1,185,510**	**1,675,568**	**9,560,365**	**12.0**
Total	**586,402**	**2,540,707**	**35,525,725**	**13,983,620**	**6,526,708**	**7,239,293**	**8,467,939**	**11,968,359**	**82,723,389**	**100.0**

AWW and NHD supervision is generally always done with ICDS supervisors = 15% and 13% of total time in Phase 2 and Phase 3, respectively. Using this alternative classificatory scheme, total sector system time is 18% in Phase 2 and 21% in Phase 3, and total overall system strengthening time is 51% and 50% in Phases 2 and 3, respectively.
District costs include all DT costs, with travel and transportation assigned in proportion to personnel time.
Item Numbers (#) refers to the bolded budgetary categories in Tables 21 and 22.

and supervision of just AWWs, with another five percent incurred in similar activities which jointly involve AWWs and ANMs. The most important activity of the ICDS and health system strengthening is at the block level, which accounts for 18 percent of RACHNA costs. While the sector meetings have become the heart of the strategy, system strengthening activities at the sector level constitute only eight percent of RACHNA's costs.

The "Value" of RACHNA: Towards a Cost-Effectiveness Analysis

The value or cost-effectiveness of RACHNA is an important issue and one which is particularly salient for the GoI in deciding whether or not to expand RACHNA. The nature of RACHNA, with its multiple interventions and diverse target populations, makes it difficult to construct a measure that is comparable with other health interventions. This task is further complicated by the relatively few potential indicators for which baseline and endline data are available. Rather than simply dismiss this line of inquiry, it was deemed important to do what could be done, while making sure that the limitations of the data and the methods were transparent. This section presents an imperfect and only partial accounting of the cost-effectiveness of RACHNA, using the Harvest Plus (2005) analytic framework. Due to the non-availability of morbidity measures, the analysis is based only on estimated changes in mortality. Given the absence of a control group (and thus no control for what is referred to as "history" in statistical parlance), together with the absence of controls for factors other-than RACHNA that may have contributed to the reported changes, ("confounding variables" in statistical parlance), this analysis should be regarded, at best, as constituting only an "adequacy assessment" of the impact and effectiveness of RACHNA (Habicht, et al., 1999). In short, this analysis is most accurately construed as indicative, rather than definitive.

The RACHNA Final Evaluation (Anderson et al., 2006) was reviewed with the aim of identifying impact and outcome indicators for which there are interventions that have been demonstrated with adequate scientific rigor such that they are included in the Cochrane database of randomized control trials and for which there exist quantitative impact estimates (Jones, et al. 2003). Three qualifying RACHNA indicators were identified: (1) the percent of children who received at least two doses of vitamin A, (2) the percent of children exclusively breastfed until six months old, and (3) the prevalence of malnutrition.

Mortality Reductions Attributable to Increased Vitamin A Supplementation

RACHNA's January 2001 baseline found that five percent of children 12-23 months old had received at least two doses of vitamin A. The February 2006 endline revealed that this proportion had increased to 27 percent. According to the Bellagio Child Survival Group (Jones et al, 2003), the mortality rate of children under-five would be reduced by two percent if all children had sufficient intake of vitamin A. Estimating the number of live births in the RACHNA beneficiary population as 2.3 million, and the Under five mortality rate as 102.3, it is estimated that the deaths of 4,784 under-five children were attributable to vitamin A deficiency at baseline. At endline, it is estimated that there were 3,731 U5 child deaths

attributable to vitamin A deficiency. The difference, 1,052 deaths, is the number of deaths averted – attributable to an increase in coverage that may have been due to RACHNA. Assuming that the average remaining life expectancy of the children who died was 64.4 years, and a discount rate of three percent, it is estimated that the increased coverage in vitamin A resulted in savings of 30,000 years of life lost (or disability-adjusted life-years, DALYs, gained).[2]

Mortality Reductions Attributable to Increased Exclusive Breastfeeding

RACHNA's baseline does not include information on the prevalence of exclusive breastfeeding of children less than six months old. This prompted the adoption of nation-wide average rate from the Family Health and Nutrition Survey 1998-1999, 25.3 percent, as a proxy measure. According to the Bellagio Child Survival Group, universal breastfeeding would prevent 13 percent of U5 deaths. At baseline it is estimated that the deaths of 7,867 children in the RACHNA beneficiary population were averted due to their being exclusively breastfed until six months of age. At endline, with the increase in the proportion of children who were exclusively breastfed until six months, it is estimated that the deaths of 13,682 children were prevented due to breastfeeding. The difference, 5,815 deaths averted, is due to the increase in exclusive breastfeeding that might be attributable to RACHNA. Assuming average life expectancy of 64.4 years and a discount rate of 3 percent, it is estimated that the increased practice of exclusive breastfeeding through six months of age resulted in savings of 165,752 (discounted) years of life lost (or DALYs gained).

Mortality Reductions Attributable to Reduced Malnutrition

RACHNA's 2001 baseline found that 61.2 percent of children 12-23 months old were malnourished as measured by weight for age. The February 2006 endline survey found that the rate had fallen to 53 percent, a reduction of 8.2 percentage points, or 13 percent. According to the 2004 Comparative Risk Assessment study (Fishman, et al., 2004), 40 percent of under-five mortality throughout the Southeast Asia Region was attributable to underweight. Assuming this regional rate is representative of the RACHNA states, it may be estimated that at baseline the deaths of 49,914 children were attributable to malnutrition.[3] If the reduction in the number of under-five children in the RACHNA states whose death was attributable to malnutrition were reduced in direct proportion to the reduction in malnutrition in the RACHNA states, it may be estimated that at endline the number of deaths due to malnutrition was 43,425. Given these assumptions, it may be estimated that RACHNA saved the lives of 6,849 under-five children and gained them 184,967 DALYs.

[2] The DALY is a measure of healthy life lost as a result of poor health or disability, a measure of the gap between current health status and an ideal situation where everyone lives into old age free of disease and disability.

[3] No endline malnutrition data were available for Bihar or MP. The calculations here are based only on the remaining RACHNA states. The calculations are state population-weighted averages of India data, and assume a crude birth rate of 27.2 per 1,000 population (Harvest Plus, 2005); that 91.9 percent of pregnancies result in a live birth (Harvest Plus, 2005); and that the U5 mortality rate is 85.2 per 1,000 live births (World Bank, WDI, 2006).

RACHNA's Cost per Averted Death and Cost per DALY Gained

The estimated mortality (only) impacts due to these three effects just discussed is 13,356 averted deaths and 380,719 DALYs gained. Comparing these annual impacts to the annual costs of RACHNA, and assuming that these impacts are due to RACHNA, it may be estimated that RACHNA's cost per death averted is 47,209 rupees (US $1,098) and its cost per DALY gained is 1,656 rupees (US $39). Bearing in mind that these are not definitive measures of the impact of RACHNA, despite the fact that these three measures only partially account for the impact of RACHNA activities, it may be concluded that from a public health perspective, RACHNA is a "good buy". The cost per death averted is the equivalent of 157 percent of India's 2005 per capita gross domestic product (GDP) of US $714, and the cost per DALY gained is 5.5 percent of the per capita GDP (World Bank, 2006). According to World Health Organization (2003) criteria, because it has a cost per DALY averted that is less than per capita GDP, RACHNA is "very cost-effective" and is a good value for money.

The Costs of Expanding the Coverage of RACHNA[4]

How RACHNA's costs will increase as it expands coverage depends upon what happens to the organizational structure and the number, intensity and mix of activities of RACHNA in the course of the program's expansion. These factors, in turn, are likely to depend on the capacity of the existing RACHNA Program to absorb additional program sites, and/or on its strategy about how to continue to manage current RACHNA program sites as it introduces new sites.

Over the course of the phasing-in of RACHNA, CARE has increased the program's coverage in, for example, a given state, by extending coverage of new sites without hiring additional CIHQ or SMT staff, and thus avoiding adding (or adding significantly) to costs. This is how it phased-in increased coverage from being focused exclusively on demonstration sites, extending the program over time to increasing numbers of replication sites. Similarly, at the block level within a particular district, RACHNA has been able to extend coverage by having its NGOs reduce the intensity of their operations within existing program sites and thus do so without increasing costs.

This approach enables to expand coverage while incurring less than proportionate increases in costs, as the costs of the higher level structures of the program remain fixed. The existence of these fixed costs means that costs will not increase in direct proportion to the number of states, district, blocks, sectors, communities or beneficiaries covered by the program. The fixed costs can in effect be spread over a larger number of lower program structures or implementation units, and over larger numbers of communities and AWWs, ANMs, CAs and beneficiaries, thereby reducing the average cost of the program. This relationship between the existing program structure and the expansion of RACHNA's coverage is the most important determinant shaping how costs will change in a non-linear manner (less than proportionate rate) as the program expands. This consideration is what has shaped the selection of the different scenarios is presented here (Table 12.15).

[4] The discussion here presumes that RACHNA continues to be implemented by CARE or some other NGO. It does not investigate the costs of the Government attempting to adopt and implement the program on its own. That is not viewed as a viable option.

Table 12.15: **How RACHNA's coverage would be expanded?**

Scenario			
Replicate the entire current RACHNA Program, including the CIHQ costs, with the identical structure, level of staffing and operations to enable doubling the current coverage of RACHNA	INHP alone	527,584,754	12,269,413
	Chayan-Rural alone	102,935,815	2,393,856
	RACHNA (both INHP + *Chayan*-Rural)	630,520,569	14,663,269
Add one state to the current RACHNA Program while maintaining the current CIHQ structure, staff and operations, increase coverage by expanding RACHNA to one additional state which is assumed to have the characteristics of the prototype. For INHP, this will entail an additional SMT, nine new INHP DTs, 22 new NGO INHP contracts (each covering four blocks) with Capacity Building, BCC and other operations assumed to be identical to those of the prototype. For *Chayan*-Rural this will entail 7 new *Chayan*-Rural DTs and one or more NGO *Chayan*-Rural contracts (to cover 75 blocks) with Capacity Building, BCC and other operations assumed to be identical to those of the prototype.	INHP alone	57,487,582	1,336,921
	Chayan-Rural alone	25,235,493	586,872
	RACHNA (both INHP + *Chayan*-Rural)	82,723,075	1,923,792
Add one district in a state where RACHNA is currently being implemented while maintaining the current CIHQ and SMT structures, staff and operations, increase coverage by expanding RACHNA to one additional district which is assumed to have the characteristics of the prototype. For INHP, this will entail an additional INHP DT, 5 new NGO INHP contracts (each covering four blocks) with Capacity Building, BCC and other operations assumed to be identical to those of the prototype. For *Chayan*-Rural this will entail one new *Chayan*-Rural DT, and a new (or extension of an existing) NGO *Chayan*-Rural contract (costing 38,500 rupees per block), with Capacity Building, BCC and other operations assumed to be identical to those of the prototype.	INHP alone	5,215,336	121,287
	Chayan-Rural alone	2,855,538	66,408
	RACHNA (both INHP + *Chayan*-Rural)	8,070,874	187,695


एड्स का ज्ञान, बचाए जान
दुर्ग वासिनी स्वयं सहायता समूह द्वारा संचालित
सेवा चिकित्सालय
डॉ. अर्चना चौहान स्त्री रोग विशेषज्ञ
(एम.बी.बी.एस.) डि.जी.ओ. सचिव FOGSI भिलाई
मार्गदर्शित - बेरोजगार महिला सेवा समिति, भिलाई
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Conclusion

RACHNA has been demonstrated to be an effective, low cost and cost-effective program. As a public health and nutrition program, RACHNA is a sound investment for both USAID and the GoI.

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This approach enables being able to expand coverage while incurring less than proportionate increases in costs, as the costs of the higher level structures of the program remain fixed. The existence of these fixed costs means that costs will not increase in direct proportion to the number of states, district, blocks, sectors, communities or beneficiaries covered by the program. The fixed costs, can in effect, be spread over a larger number of lower program structures and implementation units, and over larger numbers of communities and AWWs, ANMs, CAs and beneficiaries, thereby reducing the average cost of the program. This relationship between the existing program structure and the expansion of RACHNA's coverage is the most important determinant shaping how costs will change in a non-linear (less than proportionate rate) as the program expands. This consideration shaped the selection of the specific scenarios of how RACHNA could expand and the estimated costs of each of the expansion scenarios are presented.

This series of working papers was envisioned and written by persons actively involved in the program design and implementation. USAID/BASICS directly contributed to the writing and production of this series of papers in several ways before it closed in India in December 2007.

This paper is written by Jack Fiedler. A number of data support and field staff gave invaluable contributions, and the papers were reviewed by CARE-India and USAID/India staff.

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Questions and comments are welcome. For this paper, they may be addressed to fiedler.jack@gmail.com or to dora@careindia.org.

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About RACHNA

Two major projects of the Reproductive and Child Health, Nutrition and HIV/AIDS (RACHNA) program of CARE-India completed five years of work supported by funds from USAID in late 2006. The second phase of Integrated Nutrition and Health Project (INHP-II) was aimed at helping reduce child malnutrition and mortality. The rural component of the *Chayan* project primarily addressed the unmet need for spacing methods, while its urban component attempted to reduce HIV transmission among at-risk groups. Together, the projects covered 78 districts and 22 cities, spread over 10 states, and worked closely with key national programs and a spectrum of different partners. This series of working papers documents the results and lessons from these five years.

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CARE India
27, Hauz Khas Village
New Delhi - 110 016, India
Ph: 91-11-2655 4101/26969770
Fax: 91-11-2656 4081/2652 9671
e-mail: cbox@careindia.org, www.careindia.org